**Additional Practice Problems - Unit 10**

**Quiz #1 –**

1. Explain the difference between:
   1. solute & solvent
   2. miscible & immiscible
   3. soluble & insoluble
2. What state of matter are solutions?
3. What is the solute and solvent in Kool-Aid?
4. Is carbon dioxide (CO2) a solution? Is air a solution?

**Quiz #2 –**

1. List 3 ways to increase the rate of dissolving.
2. According to the solubility graph under “I” in your packet:
   1. What is the solubility of NaCl at 80oC?
   2. How much KCl will dissolve in 50 g of water at 40oC?
   3. How many grams of CaCl2 would be dissolved to make an unsaturated solution at 25oC?
3. What is the relationship between temperature and the solubility of gases?
4. Which of the following would dissolve in water? (Include Lewis structures when possible.)
   1. C3H8
   2. CaBr2
   3. PCl3

**Quiz #3 –**

1. What is the molarity of a solution that has 2.50 moles of KF in 1.60 L of solution.
2. Calculate the molarity of a solution that has 0.250 grams of CaCl2 in 9.80 mL of solution.

3. How many grams of zinc nitrate are needed to make 8.0 liters of a 0.250 M Zn(NO3)2   
 solution?

4. Calculate the volume of a 3.50 M solution containing 50.0 g of Pb(C2H3O2)2.

5. How many grams of H2O are produced when 300 mL of 2.0 M HCl solution are   
 reacted with excess Mg(OH)2 solution? **2 HCl(aq) + Mg(OH)2(aq)  🡪 MgCl2(s) + 2 H2O(l)**

6. How many liters of a 0.550 M solution of AgNO3will react to form30.0 g Ag?   
 **2 AgNO3(aq) + Cu(s)** 🡪 **2 Ag(s) + Cu(NO3)2(aq)**

7. Describe, ***in detail***, the procedure for making 500. mL of a 3.50 M Na2O solution.   
 Na2O is a solid at room temperature. ***Include both a calculation and a description.***

**Quiz #4 –**

1. How many mL of 1.50 M NaF solution would you need to make 300. mL of 0.225 M   
 NaF solution?

2. What would be the concentration of a solution made by diluting 50.0 mL of 4.5 M   
 LiCl to 400. mL?

3. If 50.0 mL of a stock solution were diluted to 100.0 mL to make a new solution with   
 a concentration of 0.850 M, what was the concentration of the stock solution?

4. How would you prepare 100.0 mL of 0.25 M NaOH from a stock solution of 8.0 M   
 NaOH? Include both a calculation and a description!